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ENDOLITHIC MICROORGANISMS IN MONO LAKE

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Endolithic cyanobacteria are reported from Mono Lake, a hypersaline and highly alkaline water in California. They are found in tufa and pumice rocks in a narrow band beneath the rock surface. In laboratory cultures, they grow only under extremely low levels of light and grow toward the light source. This suggests that their growth in the rock is controlled, at least in part, by light. Heterotrophic bacteria isolated from these communities are extremophiles that can grow under highly saline and alkaline conditions. One isolate has a pH range from pH4 to pH10, perhaps the widest ever reported for organisms. Its growth requirement for Na+ , unlike other acidophiles or alkalophiles, can be substituted with K+ or Li+ . Thus, Mono Lake endolithic microorganisms are adapted both to the physical and to the chemical extremes of their specialized niche inside the rock.